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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/553,220 04/20/00 BOUTAGHOU

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000164
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WM01/1002

EXAMINER

CASTRO, A

ART UNIT

PAPER NUMBER

2652

DATE MAILED:

10/02/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/553,220

Applicant(s)

BOUTAGHOU ET AL.

Examiner

Angel A Castro

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of invention I in Paper No. 4 is acknowledged.
 2. Claims 18-29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention II, there being no allowable generic or linking claim.
- Election was made **without** traverse in Paper No. 4.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 5-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 6, it is not clear how the first section of the load beam and the second section of the load beam are connected to the flexure at the same time (see claim 3).

Claim 5 recites the limitation "the electroactive element" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2652

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1-11, 13 and 16-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Krinke et al (U.S. Pat. 5,898,544).

Regarding claim 1, Krinke et al discloses a microactuator (figure 16) for selectively altering a position of a transducing head carried by a slider in a disc drive system with respect to a track of a rotatable disc having a plurality of concentric tracks, the disc drive system having an actuator arm attached to a load beam 412 for supporting the slider over the rotatable disc, the load beam having a stationary region and a moving region, the microactuator comprising means 450a, 450b, 450c, for flexibly coupling the stationary region of the load beam to the moving region of the load beam; and means 460 and 462 for selectively altering a position of the slider with respect to the rotatable disc, the means extending from the distal end of the stationary region 446, 448 to a proximal end of the moving region 442 generally along a longitudinal centerline of the stationary region.

Regarding claim 2, Krinke discloses a microactuator (figures 16 and 17) for selectively altering a position of a transducing head carried by a slider in a disc drive system with respect to a track of a rotatable disc having a plurality of concentric tracks, the disc drive system having an actuator arm, the microactuator comprising a load beam 512 attached to a distal end of the actuator arm, the load beam having a first section 546, 548; a flexure 516 for supporting the slider carrying the transducing head; and a bending motor 460, 462 attached between the first section of the load beam and the flexure, the bending motor being deformable in response to a control signal applied thereto.

Regarding claim 13, Krinke discloses a disc drive suspension (figures 16-19) and comprising an actuator arm having a proximal end and a distal end; a load beam 512 attached to the distal end of the actuator arm, the load beam having a mounting region (shown but labeled) at a proximal end, a head suspension near a distal end, and a flexible region 518 between the mounting region and the head suspension; a flexure 516 configured to support a transducing head; a beam 542 connected between the head suspension and the flexure of the load beam; and a bending motor 460, 462 attached to a top surface of the beam such that the beam supports the bending motor and transforms a force on the flexure into a compressive load on the bending motor, the bending motor being deformable in response to a control signal applied thereto.

Regarding claim 3, Krinke shows a flexible beam 542 (figure 17) connected between the first section of the load beam and the flexure, and wherein the bending motor is attached to the flexible beam.

Regarding claim 4, Krinke shows that the bending motor is attached to a top surface of the flexible beam (figure 17) such that the flexible beam supports the bending motor and transforms a force on the flexure into a compressive load on the bending motor.

Regarding claims 5 and 8, Krinke discloses that an electroactive element is constructed from a piezoelectric material or an electrostrictive ceramic material (column 11, lines 40-44).

Regarding claim 6, as far as it is understood, Krinke shows that the load beam has a first section and a second section 546, 548, the second section connected to the flexure 516, and further wherein the flexible beam 542 is connected between the first section and the second section of the load beam (see elements 550a, 550b, 550c in figure 17).

Regarding claims 7 and 9-11 and 16-17, Krinke discloses the bending motor (column 12, lines 7-59).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 12 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krinke et al.

Regarding claim 12, Krinke does not disclose that the bending motor has a length to width ratio of at least about ten. Official Notice is taken of the fact that it is notoriously old and well known in the art to utilize the claimed ratio for the bending motor. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the microactuator of Krinke with the claimed ratio for the bending motor. The rationale is as follows:

One of ordinary skill in the art would have been motivated to provide the microactuator of Krinke with the claimed ratio for the bending motor as doing this would avoid the use of higher voltages to operate the motor.

Regarding claims 14 and 15, Krinke is silent about the claimed frequencies. Official Notice is taken of the fact that it is notoriously old and well known in the art to provide the

load beam and the suspension with the claimed frequencies. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the microactuator of Krinke et al with the claimed frequencies. The rationale is as follows:

One of ordinary skill in the art would have been motivated to provide the microactuator of Krinke et al with the claimed frequencies, as they are the result of the lightweight of the microactuator/load beam-suspension that would enable a close disk to disk spacing.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Imada et al (U.S. Pat. 6,268,983) discloses a head actuator driven by piezoelectric element; Soeno et al (U.S. Pat. 6,246,552) discloses a read/write head; Takekado et al (U.S. Pat. 5,745,319) discloses a recording/reproducing apparatus with coarse and fine head positioning.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel A Castro whose telephone number is 703-308-8435. The examiner can normally be reached on Monday through Thursday, 8 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 703-305-9687. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-308-8435 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Application/Control Number: 09/553,220

Page 7

Art Unit: 2652

Angel Castro, Ph.D.
October 1, 2001

A. J. HEINZ
PRIMARY EXAMINER
GROUP ~~2500~~ A. U. 2652
